

Motion

	r	t	d
1. Hwy	60	t	
Local	36	$t + \frac{1}{2}$	

same

$$60t = 36(t + \frac{1}{2})$$

$$t = \frac{3}{4} \text{ hr}$$

$$45 \text{ min}$$

	r	t	d
2. Car	48	t	$48t$
Truck	42	t	$42t$

$$48t + 42t = 210$$

$$90t = 210$$

$$t = 2\frac{1}{3}$$

$$\begin{array}{l} \text{Car } 48 \cdot 2\frac{1}{3} = 112 \text{ mi} \\ \text{Truck } 42 \cdot 2\frac{1}{3} = 98 \text{ mi} \end{array}$$

	r	t	d
3. Boat	r	2	$2r$
Train	$r + 20$	4	$4(r + 20)$

$$2r + 4(r + 20) = 350$$

$$6r + 80$$

$$6r = 270$$

$$r = 45$$

$$\begin{array}{l} \text{Boat } 45 \text{ mph} \\ \text{Train } 65 \text{ mph} \end{array}$$

	r	t	d
4. Rush	600	t	$600t$
Slow	320	t	$320t$

$$600t + 320t = 1380$$

$$920t = 1380$$

$$t = 1.5 \text{ hrs}$$

	r	t	d
5. Airplane	350	4	1400
Jet	r	2	$2r$

$$2r = 1400$$

$$r = 700 \text{ mph}$$

	r	t	d
6. Car	50	t	$50t$
Plane	300	$1\frac{3}{4} - t$	$300(1\frac{3}{4} - t)$

$$50t = 525 - 300t$$

$$350t = 525$$

$$t = 1.5 \times 50 \text{ mph}$$

$$\begin{array}{l} 15 \text{ min to fly back} \\ 75 \text{ mi away} \end{array}$$

opp.

same

roundtrip

		r	t	d	
same	7. Train	50	t	$50t$	$50t = 300(t-4)$
	Plane	300	$t-4$	$300(t-4)$	$-250t = -1200$

$$t = 4.8$$

$$1:48 \text{ pm}$$

		r	t	d	
opposite	8. A	350	t	$350t$	$350t + 325t = 2025$
	B	325	t	$325t$	$675t =$

$$t = 3 \text{ hrs}$$

		r	t	d	
roundtrip	9. To (hike)	2	t	$2t$	$2t = 180 - 18t$
	Fro (car)	18	$10-t$	$18(10-t)$	$20t = 180$

$$t = 9$$

		r	t	d	
different	10. Jack	$r+4$	2	$2(r+4)$	18 mi
	Kate	r	2	$2r$	

$$2(r+4) + 2r + 5 = 53$$

$$2r + 8 + 2r + 5$$

$$4r = 40$$

$$r = 10$$

Kate 10mph
Jack 14mph

Example notes

A	41	t	$41t$	$41t = 55t - 84$
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B	55	t	$55t$	$84 = 14t$
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$$6 \text{ hrs} = t$$